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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 09/674,477 | 11/01/2000 | Andre Cesar Baeck | CM1762M/VB | 1249 |

27752 7590 09/09/2003

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| EXAMINER | |
|---|---|
| RAO, MANJUNATH N | |
| **ART UNIT** | **PAPER NUMBER** |
| 1652 | 15 |

DATE MAILED: 09/09/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 09/674,477 | BAECK ET AL. | |
| | Examiner | Art Unit | |
| | Manjunath N. Rao, Ph.D. | 1652 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *24 June 2003* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1,2,16,21 and 26-28* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2,16,21 and 26-28* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☒ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

## DETAILED ACTION

### *Request for Continued Examination*

The request filed on 6-24-03 for a Continued Examination (RCE) under 37 CFR 1.114 based on parent Application No. 09/674,477 is acceptable and a RCE has been established. An action on the RCE follows.

### *Status of Claims*

Claims 1, 2, 16, 21, 26-28 are currently pending and are present for examination. Contrary to applicant's remarks in the above request for RCE that claims 1, 2, 15-21, 24, and 26-28 are currently pending in this application, only claims 1, 2, 16, 21, 26-28 are currently pending and are present for examination. Also, applicant's request to amend claim 24 in paper No. 14, filed 6-24-03 has not been entered as said claim 24 and claims 15, 17, 18, 19, 20 were cancelled by applicants in the amendment filed on 1-24-03 as Paper No.11. Said amendment filed on 1-24-03 was first indicated by the Examiner as "not-entered" in his "Advisory action", paper No. 12, mailed on 2-14-03. However, since applicants have not indicated in their request for an RCE, filed on 6-24-03, that the "previous amendment" not be entered, said amendment had to be entered and considered by the Examiner. Therefore claim 1, 2, 16, 21, 26-28 only are currently pending in this application.

Applicants' amendments and arguments filed on 1-24-03, Paper No. 11 and that filed on 6-24-03, paper No.14, have been fully considered and are deemed to be persuasive to overcome the rejections previously applied. Rejections and/or objections not reiterated from previous office actions are hereby withdrawn.

***Priority***

Acknowledgment is made of applicant's claim for foreign priority based on an application filed in PCT US 98/08857 on 1-5-1998. It is noted, however, that applicant has not filed a certified copy of the priority application as required by 35 U.S.C. 119(b). Therefore, Examiner has not granted the benefit of foreign priority to the instant application.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 1 and claims 2, 16, and 26-28 depending from claim 1 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 1 recites the phrase "softening protein". The metes and bounds of the above phrase is not clear to the Examiner. While "fabric care compositions" are well known and clear to the Examiner, the scope of a protein labeled as "softening protein" is not clear to the Examiner. *(Examiner is aware that such a rejection was made earlier during the prosecution and that Examiner himself suggested using the term "fabric" before the above phrase to render the phrase definite. However, upon reevaluation of the phrase at this time Examiner has concluded that the above phrase continues to be vague or indefinite. Examiner regrets the previous suggestion).*

Claim 27 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as

the invention. Claim 27 recites the limitation "fabric care ingredient" in line 1. There is insufficient antecedent basis for this limitation in the claim.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

Claim 1 is rejected under 35 U.S.C. 102(a) as being anticipated by Sakka et al. (Ann NY Acad. Sci., Dec 1998, Vol. 864:485-488). This rejection is based upon the public availability of a printed publication. Claim 1of the instant application are drawn to a fabric-softening protein hybrid comprising an amino acid sequence comprising a cellulose binding domain (CBD) linked to a fabric softening protein wherein said fabric softening protein is linked to said amino acid sequence comprising CBD, via an amino acid and/or non-amino acid linking region, wherein the CBD is selected from a group of CBDs consisting of the CBDs from *Clostridium stercorarium* XynA. Sakka et al. disclose such a hybrid protein comprising a cellulose binding domain of *Clostridium stercorarium* XynA, linked to a softening protein (endoglucanase) via an amino acid linker. Therefore Sakka et al. anticipate claim 1 of this application as written.

The following obviousness rejection is directed to claim 1 and its dependent claims, specifically directed to the embodiment of claim 1 drawn to a hybrid protein comprising a

cellulose binding domain linked to a fabric softening protein via an amino acid or non-amino acid linking region, wherein the CBD is obtained from *C.cellulovorans*.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1, 2, 16, 21, 26-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schulein et al. (WO 94.07998, April 1994, cited in IDS) or Gilkes et al. (WO 93/05226, 18 Mar 1993, cited in IDS) and Goldstein et al. (J. Bacteriology, 1993, Vol. 175(18):5762-5768) and the high level of knowledge existing in the art of making detergent compositions. Claims 1, 2, and 16, 21, 26-28 are drawn to a hybrid protein comprising a cellulose binding domain linked through an amino acid linker to an active/inactive protein, wherein the CBD is selected from *C.cellulovorans*. and fabric care composition comprising the same (claim 2).

Schulein et al. provides a hybrid protein comprising a CBD obtained from *H.insolens* linked to a softening protein through an amino acid linker and Gilkes et al. teach methods of making such hybrid protein by making use of at least two CBDs from *C.fimi* and a softening protein which is inactive or active (see pages 5 through 9) and their use in fabric care compositions. However, the references do not teach the use or specific construction of a hybrid protein comprising CBD obtained from *C.cellulovorans* linked to a softening protein through an

amino acid or non-amino acid linker region such as that described in claim 16 of the instant application and/or its use in fabric care composition.

Goldstein et al. characterize the CBD from *C.cellulovorans*. The reference teaches that *C.cellulovorans* produces the CBD as a non-enzymatic independent protein and mediates the interaction of the cellulase and CBD bound to the cellulose. The reference also teaches that said CBD bound specifically to crystalline cellulose such as those found in cotton fibers.

Armed with the teaching of Schulein et al., or Gilkes et al. to construct hybrid proteins comprising a CBD isolated from other sources and their use in making detergent compositions, it would have been obvious to those skilled in the art to construct or make a similar hybrid protein using the CBD obtained from *C.cellulovorans* as taught by Goldstein et al. instead of the CBD obtained from any other source. Goldstein et al. teach that the CBD of *C.cellulovorans* has high capacity to bind specifically to crystalline cellulose. Using this information along with other general information common in the art of detergent composition, it would have been obvious to one of ordinary skill in the art to develop a hybrid protein comprising a CBD from *C.cellulovorans* for use in fabric care composition. One of ordinary skill in the art would have been motivated to do so in order to make such compositions for exclusive use on cotton fabrics and improve the efficiency of the existing detergent compositions used for cotton fabrics. One of ordinary skill in the art would have a reasonable expectation of success as Schulein et al. and Gilkes et al. provide a step by step method for construction of a hybrid protein, and Goldstein et al. provide another source for a specific CBD that can exclusively target cotton fabrics. On similar lines, Examiner also takes the position that using the techniques taught by Gilkes et al. or Schulein et al. it would have been indeed obvious to those skilled in the art to pick and choose

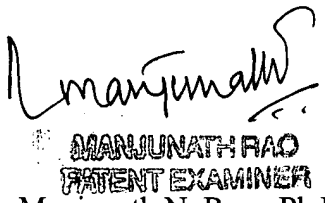
any CBD available in the prior art, depending on the characteristics of said CBDs and depending on the end use of said hybrid proteins and construct or make hybrid proteins for a variety of uses.

Therefore, the above claims would have been *prima facie* obvious to one of ordinary skill in the art.

***Conclusion***

None of the claims are allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Manjunath Rao whose telephone number is (703) 306-5681. The Examiner can normally be reached on M-F from 7:30 a.m. to 4:00 p.m. If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, P.Achutamurthy, can be reached on (703) 308-3804. The fax number for Official Papers to Technology Center 1600 is (703) 305-3014. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0196.




Manjunath N. Rao. Ph.D.
September 5, 2003